

CLAIMS:

1. A clip fastener comprising:
 - a housing;
 - a releasable cartridge located in or on the housing for holding a plurality of clips, the releasable cartridge having regulating means thereon;
 - 5 a track for receiving clips from the magazine, the track comprising a pair of guide rails; means for varying the distance between the guide rails in response to the regulating means on the cartridge; and
 - a ram member for moving the clip along a pathway defined by the track.
- 10 2. A clip fastener as claimed in claim 1 further comprising spreader means for separating an inner loop of the clip from an outer loop thereof.
3. A clip fastener as claimed in claim 1 wherein the releasable cartridge comprises a magazine having rectangular or oval body for receiving a plurality of stacked clips, the body having a lid and a spring for urging the plurality of clips in a direction away from the lid, the body further having a dispensing aperture at an end opposite that of the lid, wherein a clip within the 15 cartridge is dispensed through the dispensing aperture.
4. A clip fastener as claimed in claim 1 wherein each guide rail receives a side piece of an outer loop of the clip, the distance between the rails slightly exceeding the width defined by side pieces of an inner loop of the clip.
- 20 5. A clip fastener as claimed in claim 1 wherein:
 - the means for varying the distance between the guide rails comprises at least one projection associated with each of the guide rails; and
 - the regulating means on the cartridge comprises an activating surface on the cartridge, the activating surface cooperating with the means for varying the distance on the guide rails to set the 25 distance between the guide rails.
6. A clip fastener as claimed in claim 5 wherein the activating surface comprises the presence or absence of a recess, wherein the recess when present receives the projection so the distance between the guide rails remains unchanged, and the absence of a recess causes the activating surface to engage the projection to force the guide rails further apart from each other.
- 30 7. A clip fastener as claimed in claim 1 wherein:
 - the means for varying the distance between the guide rails comprises a receiving surface

associated with each of the guide rails; and

the regulating means on the cartridge comprises an activating surface on the cartridge, the activating surface cooperating with the receiving surface on the guide rails to set the distance between the guide rails.

5. A clip fastener as claimed in claim 7 wherein the receiving surface is a substantially flat area and the activating surface comprises the presence or absence of a projection, wherein the absence of the projection causes the distance between the guide rails to remain unchanged, and the presence of a projection causes the projection to engage the flat area to force the guide rails further apart from each other.

10. 9. A clip fastener as claimed in claim 1 further comprising at least one storage means for storing magazines not currently in use.

10. A clip fastener as claimed in claim 1 further comprising:
a sensor switch associated with the cartridge; and
a window in the cartridge through which the sensor switch can detect the presence,
15 absence and/or low level quantity of clips in the cartridge.

11. A clip fastener as claimed in claim 1 wherein the cartridge comprises at least one securing member for securing the cartridge in the clip fastener.

12. A clip fastener as claimed in claim 1 wherein the cartridge includes biasing means for biasing a plurality of clips in the cartridge toward the lower end of the cartridge.

20. 13. A clip fastener as claimed in claim 1 wherein the guide rails are movable between a first position so as to have a first distance between them and a second position so as to have a second larger distance between them, the guide rails in the first position being adapted to receive standard size smaller clips and the guide rails in the second position being adapted to receive standard size larger clips.

25. 14. A clip fastener as claimed in claim 1 wherein a depressor is provided for separating inner and outer loops of the paper clips and comprises a thin, flat structure having a curved edge for engaging the inner loop.

15. A clip fastener as claimed in claim 13 further comprising biasing means for normally urging the guide rails into the first position.

30. 16. A clip fastener as claimed in claim 1 further comprising a spring member for engaging the cartridge to facilitate secure attachment within the clip fastener.

17. A clip fastener as claimed in claim 16 wherein the spring member comprises a leaf spring secured by a pair of pins.

18. A clip fastener as claimed in claim 1 further comprising at least one light for indicating the size of clips in the cartridge.

5 19. A clip fastener as claimed in claim 1 further comprising a surface upon which papers to be clipped are mounted so as to receive the clip from the clip fastener.

20. A clip fastener as claimed in claim 19 wherein the surface is mounted on a spring so that the level of the surface is automatically adjusted according to the weight or volume of the papers mounted thereon.

10 21. A clip fastener as claimed in claim 1 wherein the ram member is mechanically activated.

22. A clip fastener as claimed in claim 1 wherein the ram member is electrically operated.

15 23. A clip fastener as claimed in claim 1 wherein the spreader means comprises a pair of wedge-shaped spreaders having a sharpened leading edge, an upper surface substantially parallel and coplanar with the track, and a lower inclined surface, each wedge for engaging a clip as it moves along the pathway for separating the inner loop of the clip from the outer loop thereof.

20 24. A clip fastener as claimed in claim 1 further comprising a depressing member immediately upstream of the spreader means, the depressing member pushing down slightly a leading part of the inner loop of the clip to facilitate engagement of the spreader between the inner loop and the outer loop.

25 25. A cartridge for use with a clip fastener, the cartridge comprising a housing for receiving a plurality of paper clips, regulating means on the housing for cooperating with the clip fastener, the regulating means adjusting the distance between a pair of guide rails in the housing so that the guide rails will be configured to process paper clips of the size contained in the cartridge.

30 26. A cartridge as claimed in claim 25 further comprising an opening in the cartridge through which a sensor can detect the presence, absence and/or low quantity of clips in the cartridge.

27. A clip fastener comprising:

5 a housing;
 a magazine located in or on the housing for holding a plurality of clips;
 a track for receiving clips from the magazine;
 means for moving the clip along a pathway defined by the track; and
 spreader means in the pathway for separating an inner loop of the clip from an outer loop
 thereof, the spreader means including grooves formed therealong configured for receiving at least
 a part of the clip to stabilize the clip as it moves over the spreader means.

10 28. A clip fastener as claimed in claim 27 wherein the spreader means has a first set
 of grooves for receiving at least a part of the outer loop of a smaller clip and a second set of
 grooves for receiving at least a part of the inner loop of a larger clip.

15 29. A clip fastener as claimed in claim 23 wherein the wedge has a first sloped surface
 for separating the inner loop of a standard size small clip from the outer loop thereof and a second
 sloped surface for separating the inner loop of a standard size large clip from the outer loop
 thereof.

30. A clip fastener as claimed in claim 23 wherein the wedges have channels therein
 for stabilizing a paper clip moving thereover.

31. A clip fastener as claimed in claim 1 wherein the clip fastener is able to
 accommodate and dispense paper clips of at least two sizes.